

DETAILED ACTION

Response to Amendment

1. The action is responsive to the Amendment filed on July 11, 2008. Claims 1-17 are pending. Claims 1, 6, 7, 9, 13, 14 and 17 have been amended. Claim 18 has been cancelled.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Luan Do (Reg. No. 38,434) on October 24, 2008.

The application has been amended as follows:

IN THE CLAIMS:

Claim 6, line 4, currently states:

"the current distribution, L and I are orders,"

And has been amended to state:

--the current distribution, L and I are orders,--

Claim 7, line 5, currently states:

"is a constant associated with order I,"

And has been amended to state:

--is a constant associated with order I,--

Claim 9, line 6, currently states:

"measurement sensor 2, 2¹, 2²,...2ⁿ corresponds to"

And has been amended to state:

--measurement sensor (2, 2¹, 2²,...2ⁿ) corresponds to--

Claim 13, line 5, currently states

"the current distribution, L and I are orders,"

And has been amended to state:

--the current distribution, L and I are orders,--

Claim 14, line 7, currently states:

"is a constant associated with order I,"

And has been amended to state:

--is a constant associated with order I,--

Allowable Subject Matter

3. **Claims 1-17** are allowed.
4. The following is an examiner's statement of reasons for allowance:

With respect to **claims 1 and 9**, Robinson does not teach that the signals of the set of virtual sensors are mutually orthogonal, in combination with all other limitations in the claim as defined by applicant.

Jewett et al. (US Patent 5,687,724) teaches a method of determining variations in measured physical parameters of signal generators. Measurements are references to the origin of three orthogonal axes (col 6, ln 6-9). Orthogonal vectors are further

used during a decomposition procedure (col 15, ln 1-12). Jewett et al. does not teach that the signals of the set of virtual sensors are mutually orthogonal.

Airey et al. (US Patent 6,454,036) teaches an autonomous vehicle navigation system and method. Three magnetometers are positioned at orthogonal angles to provide a three dimensional vector that gives the direction of the naturally occurring field (col 3, ln 19-30). Airey et al. does not teach virtual sensors and does not provide any motivation for converting the sensor signals as they are already in the necessary orientation (col 3, ln 26-27).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JANET L. SUGLO whose telephone number is (571)272-8584. The examiner can normally be reached on M-Th from 7:30am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on 571-272-7925. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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